

ABSTRACT OF THE DISCLOSURE

A method of fabricating a damascene structure comprises of forming a dielectric layer on a substrate, and an opening is formed on the dielectric layer to expose a portion of the substrate. The dielectric layer is thus defined. A barrier layer is formed conformal to the profile of the opening and a metal layer fills the opening. Two chemical mechanical polishing processes are carried out sequentially to polish the metal layer and the barrier layer, wherein a first slurry is used to polish the metal layer and a second slurry that contains oxidant is used to polish the barrier layer. A damascene structure is thus formed.